

MECHANICAL SPECIFICATIONS
15055 – BASIC PIPING MATERIALS AND METHODS
<div>1. CORE CUT ALL PIPE PENETRATION OF EXISTING MASONRY OR CONCRETE WALLS AND FLOORS. SLEEVE ALL PENETRATIONS THROUGH NEW WALLS AND FLOORS. SEAL ALL PENETRATIONS WATER TIGHT WITH SILICONE SEALANT. USE FIRE RATED SEALANT (3M "FIRE BARRIER" OR EQUAL ) FOR 1 HOUR OR 2 HOUR PENETRATIONS.</div> <div>2. CAULK AROUND ALL PIPING THAT PASSES THROUGH FIRE-RATED PARTITIONS WITH A NON-HARDENING CAULKING SIMILAR TO 3M "FIRE BARRIER".</div> <div>3. SEAL ALL PIPING THROUGH WALLS AIR TIGHT.</div>

15100 – VALVES
<div>1. PROVIDE VALVES OF THE TYPE AND QUANTITY SHOWN ON THE DRAWINGS. VALVES OF THE SAME TYPE TO BE BY ONE MANUFACTURER.</div>

15190 – MECHANICAL IDENTIFICATION
<div>1. PIPE MARKERS: PLASTIC TAPE: PROVIDE MANUFACTURER’S STANDARD COLOR-CODED PRESSURE-SENSITIVE (SELF ADHESIVE) VINYL TAPE, NOT LESS THAN 3 MILS THICK. 1–1/2" WIDE TAPE MARKERS ON PIPES WITH OUTSIDE DIAMETERS LESS THAN 6" (INCLUDING INSULATION, IF ANY); 2–1/2" WIDE TAPE FOR LARGER PIPES.</div> <div>2. DUCT MARKERS: PROVIDE MANUFACTURER’S STANDARD LAMINATED PLASTIC; COLOR CODED DUCT MARKERS.</div> <div>3. COLOR: COMPLY WITH ANSI A13.1</div> <div>4. LETTERING: MANUFACTURER’S STANDARD PRE-PRINTED NOMENCLATURE WHICH BEST DESCRIBES PIPING OR DUCT SYSTEM IN EACH INSTANCE OR AS SELECTED BY ARCHITECT OR ENGINEER IN CASES OF VARIANCE WITH NAMES AS SHOWN.</div> <div>5. ARROWS: PRINT EACH MARKER WITH ARROWS INDICATING DIRECTION OF FLOW.</div>

15242 – VIBRATION ISOLATION AND SEISMIC BRACING
<div>1. ALL MECHANICAL EQUIPMENT, DUCTWORK, AND PIPING MUST BE VIBRATION ISOLATED AND SEISMICALLY BRACED FOR THE SITE SPECIFIC SEISMIC DESIGN CATEGORY AND SEISMIC USE GROUP. IN ACCORDANCE WITH THE LATEST ADOPTED EDITIONS OF THE IBC, UBC, ASHRAE, AND SMACNA. PROVIDE SEISMIC PRODUCTS BY AMBER-BOOTH OR MASON INDUSTRIES.</div> <div>2. IN GENERAL, PROVIDE SPRING MOUNTS TO ATTENUATE LOW FREQUENCY SOUND AND VIBRATION AND NEOPRENE PADS TO ATTENUATE HIGH FREQUENCY SOUND AND VIBRATION. SEISMIC BRACING/MOUNTING CAN BE COMBINED WITH VIBRATION ISOLATION AS APPLICABLE.</div> <div>3. CONTRACTOR MANUFACTURED SEISMIC BRACING/RESTRAINT METHODS ARE NOT ACCEPTABLE. PROVIDE A SIGNED AND STAMPED LETTER FROM A PROFESSIONAL ENGINEER CERTIFYING THAT THE SUPPLIED PRODUCTS ARE CORRECT FOR THE APPLICATION AND THAT THE INSTALLATION IS IN COMPLIANCE WITH ALL APPLICABLE CODES.</div>

15250 – MECHANICAL INSULATION
<div>1. WRAP ALL SUPPLY AND RETURN DUCTWORK WITH 1–1/2" THICK FOIL FACED FIBERGLASS INSULATION. WRAP INSULATION TIGHTLY ON THE DUCT WITH ALL CIRCUMFERENTIAL JOINTS BUTTED AND LONGITUDINAL JOINTS OVERLAPPED A MIN. OF 2". COVER ALL JOINTS WITH FOIL-REINFORCED "KRAFT" TAPE, 3" WIDE.</div> <div>2. NO RETURN AIR DUCT INSULATION IS REQUIRED IF THE RETURN AIR AND PLENUM TEMPERATURE DIFFERENCE IS LESS THAN 10°F</div> <div>3. SEE 15891 FOR LINED RECTANGULAR DUCTWORK.</div>

15782 – ROOFTOP HEATING AND COOLING UNITS
<div>1. UNITS SHALL BE FACTORY ASSEMBLED AND TESTED, DESIGNED FOR ROOF OR SLAB INSTALLATION, AND CONSISTING OF GAS BURNER, HEAT EXCHANGER, COMPRESSORS, CONDENSERS, EVAPORATOR COILS, CONDENSER AND EVAPORATOR FANS, REFRIGERATION AND TEMPERATURE CONTROLS, FILTERS AND DAMPERS.</div> <div>2. MANUFACTURERS: A. CARRIER B. LENNOX C. YORK D. AAOB</div> <div>3. PROVIDE UNITS WITH ROOF CURB, ECONOMIZER WITH MINIMUM 85% BAROMETRIC RELIEF, HIGH AND LOW PRESSURE CUTOUTS, 10 YEAR HEAT EXCHANGER WARRANTY, 5 YEAR WARRANTY, AND ONE EXTRA SET OF BELTS AND FILTERS.</div> <div>4. PROVIDE A COPPER P-TRAP ON ALL ROOFTOP CONDENSATE DRAIN PANS, SIZED THE SAME AS THE OUTLET SIZE OF THE MANUFACTURER'S DRAIN PAN. DRAIN CONDENSATE TO ROOF UNLESS NOT ALLOWED BY LOCAL CODES. PROVIDE A 6" SQUARE (MINIMUM) CONCRETE SPLASH BLOCK UNDERNEATH THE DRAIN OUTLET, WITH A MINIMUM 1" AIR GAP.</div> <div>5. PROVIDE FACTORY INSTALLED AND WIRED SMOKE DETECTOR IN SUPPLY AND RETURN AIR STREAM FOR ALL UNITS OF 2,000 CFM AND LARGER CAPACITY. UNIT SHALL SHUT DOWN AUTOMATICALLY UPON DETECTION OF SMOKE.</div>

15850 – FANS AND ROOF HOODS
<div>1. CEILING MOUNTED EXHAUST FANS SHALL BE COMPLETE WITH LOUVERED GRILLE, BACKDRAFT DAMPER, AND WALL CAP OR ROOF CAP, SEE PLANS.</div> <div>2. MANUFACTURERS: A. COOK B. ILG C. PENN D. GREENHECK E. BROAN</div>

MECHANICAL SPECIFICATIONS
15890 – METAL DUCTWORK
<div>1. ALL DUCTWORK SHALL BE CONSTRUCTED, ERECTED, AND TESTED IN ACCORDANCE WITH THE MOST RESTRICTIVE OF LOCAL REGULATIONS AND PROCEDURES DETAILED IN THE ASHRAE HANDBOOK OF FUNDAMENTALS, OR THE APPLICABLE STANDARDS ADOPTED BY THE SHEET METAL AND AIR CONDITIONING CONTRACTOR’S NATIONAL ASSOCIATION, (SMACNA).</div> <div>2. TRANSITION ALL NEW DUCTWORK TO CONNECT TO OTHER DUCTWORK AND EQUIPMENT, AS REQUIRED.</div> <div>3. DUCTWORK SHALL BE GALVANIZED STEEL THROUGHOUT, FABRICATED AND INSTALLED SO THAT NO VIBRATION OR NOISE RESULTS. IT SHALL BE MADE FROM THE BEST GRADE OF GALVANIZED MILLED STEEL SHEETS OF U.S. STANDARD GAUGE AND BE FREE FROM BLISTERS, SLIVERS, AND PITS. ALL SEAMS SHALL BE AIRTIGHT, THE CONSTRUCTION OF ALL DUCTWORK, INCLUDING GAUGES OF METAL, BRACING LAYOUT, ETC., SHALL BE IN ACCORDANCE WITH SMACNA. SLEEVES FOR FIRE DAMPERS AND DUCT SECTIONS FORMING AN EXTENSION OF THE FIRE WALL SHALL BE 10 GAUGE STEEL.</div> <div>4. SEAL DUCTWORK ACCORDING TO THE FOLLOWING SMACNA DUCT SEALING CLASS:</div>

DUCT LOCATION	DUCT TYPE			
	SUPPLY		EXHAUST	RETURN
	<2in. Wg.	>2in. Wg.	A	A
OUTDOORS	A	A	A	A
UNCONDITIONED SPACES	B	A	B	B
CONDITIONED SPACES	C	B	B	B
(CONCEALED DUCTWORK)				
CONDITIONED SPACES (EXPOSED DUCTWORK)	A	A	B	B

<div>5. HANGERS FOR DUCTS UP TO 18" IN WIDTH OR DIAMETER SHALL BE PLACED ON NOT MORE THAN 8 FOOT CENTERS. DUCTS 19" AND OVER IN WIDTH OR DIAMETER SHALL BE SUPPORTED ON NOT MORE THAN 4 FOOT CENTERS. DUCT HANGERS SHALL BE CONSTRUCTED OF GALVANIZED BAND IRON 1–1/8" FOR DUCTS UP TO 36" IN WIDTH OR DIAMETER. HANGERS SHALL EXTEND DOWN SIDES AND A MINIMUM OF 1" UNDER RECTANGULAR DUCTS, AND WRAP COMPLETELY AROUND ROUND DUCTS. ALL DUCTS SHALL BE RIGIDLY SUPPORTED.</div>	<div>6. DUCT SOUND ISOLATION: A. DUCT HANGER STRAPS SHALL HAVE A STRIP OF DUCT SOUND ISOLATION MATERIAL BETWEEN THE STRAP AND THE DUCT. I. THE SOUND STRIP SHALL BE 1½ x THE WIDTH OF THE HANGER STRAP, AND EXTEND FULL-HEIGHT UP THE SIDE OF THE DUCT, SO AS TO AVOID CONTACT BETWEEN THE STRAP AND THE DUCT. II. SHEETMETAL SCREWS USED TO SECURE THE STRAP TO THE DUCT SHALL HAVE A NEOPRENE OR FIBROUS ISOLATION WASHER BETWEEN THE SCREW-HEAD AND THE STRAP. III. AVOID METAL–METAL SHORT CIRCUITING BY ENLARGING THE SCREW HOLE THROUGH THE HANGER STRAP TO BE LARGE ENOUGH TO AVOID DIRECT CONTACT BETWEEN THE SCREW AND THE STRAP. B. DUCT HANGER STRAPS SUPPORTS AT THE STRUCTURE SHALL HAVE A STRIP OF DUCT SOUND ISOLATION MATERIAL BETWEEN THE STRAP AND THE STRUCTURE. I. THE SOUND STRIP SHALL BE 1½ x THE WIDTH OF THE HANGER STRAP, AND EXTEND FULL-LENGTH BETWEEN THE STRAP AND THE STRUCTURE, SO AS TO AVOID CONTACT BETWEEN THE STRAP AND THE STRUCTURE. C. DUCTS SUPPORTED VERTICALLY OR HORIZONTALLY BETWEEN STRUCTURE SUCH AS STUDS OR JOISTS, SHALL HAVE A STRIP OF DUCT SOUND ISOLATION MATERIAL BETWEEN THE DUCT AND THE STRUCTURE. I. SPACE SOUND STRIPS ALONG THE DUCT SO THAT NO METAL–TO–STRUCTURE CONTACT IS POSSIBLE. II. SOUND STRIPS SHALL BE 2" MINIMUM WIDTH, EXTENDING 1" BEYOND EACH END OF THE DUCT (WHENEVER POSSIBLE). D. MANUFACTURERS: ½" THICK, 100% POLYESTER FABRIC, BARIUM-LOADED VINYL. I. SOUNDGUARD, MODEL WAVEBAR, 4 kg/sq m. DENSITY. II. SONEX PSP–7, 1 LB/SQ FT. DENSITY.</div>
<div>7. ALL DUCTWORK SHALL BE CLEANED PRIOR TO THE INSTALLATION OF CEILING, DIFFUSERS AND GRILLES. OPERATE FANS TO BLOW OUT DUCTWORK.</div>	
<div>8. RECTANGULAR LOW-PRESSURE SUPPLY AND RETURN AIR DUCTWORK SHALL BE LINED WITH 1" FACED FIBERGLASS INSULATION SECURELY BUTTONED OR LAPPED AND SEALED. INSULATION SHALL BE 1–1/2 POUND DENSITY.</div>	
<div>9. DUCT DIMENSIONS SHOWN ON DRAWINGS ARE INSIDE CLEAR AREA AND SHALL BE INCREASED TO ACCOMMODATE INSULATION. DUCT LINER TO BE BY KNAUF GmbH, JOHNS-MANVILLE OR SCHULLER INTERNATIONAL.</div>	

15932 – GRILLES, DIFFUSER AND LOUVERS
<div>1. ALL GRILLES, DIFFUSERS, AND REGISTERS SHALL BE COMPLETE WITH FRAMES AND RUBBER GASKETS. FINISH FOR ALL REGISTERS, DIFFUSERS, AND GRILLES SHALL BE WHITE.</div> <div>2. MANUFACTURERS: A. KRUEGER B. TITUS C. PRICE D. NAILOR  THE FOLLOWING KRUEGER PRODUCTS SHALL BE USED AS A REFERENCE:</div> <div>3. COORDINATE THE LOCATIONS OF ALL CEILING DIFFUSERS, REGISTERS, AND GRILLES WITH THE ARCHITECTURAL REFLECTED CEILING PLAN, ELECTRICAL LIGHTING LAYOUT, AND ARCHITECTURAL ELEVATIONS.</div>

15990 – TESTING, ADJUSTING, AND BALANCING
<div>OBTAIN THE SERVICES OF AN INDEPENDENT TESTING AND BALANCING AGENCY TO BALANCE AND ADJUST THE SYSTEM. THIS SHALL BE DONE BY PERSONS FULLY FAMILIAR WITH SYSTEMS OF THIS TYPE. BALANCING SHALL BE DONE IN ACCORDANCE TO AABC OR NEBB STANDARDS. ALL DATA SHALL BE RECORDED AND A REPORT SUBMITTED TO THE ENGINEER PRIOR TO JOB CLOSE OUT.</div>

MECHANICAL SPECIFICATIONS
15910 – DUCTWORK ACCESSORIES
<div>1. FLEXIBLE DUCTWORK: THE FINAL 5 FOOT CONNECTION TO GRILLES AND DIFFUSERS IN LAY-IN CEILINGS, OR TO FLOOR MOUNTED GRILLES, MAY BE MADE WITH FLEXIBLE DUCT, FLEXMASTER TYPE 5M ONLY. ENDS SHALL BE SEALED.</div> <div>2. SQUARE/RECTANGULAR ELBOWS SHALL BE PROVIDED WITH TURNING VANES.</div> <div>3. ALL DUCT BRANCHES AND TAKE-OFFS SHALL BE HIGH-EFFICIENCY TYPES, WITH DUCT MOUNTED BALANCING DAMPERS.</div> <div>4. PROVIDE FLEXIBLE CONNECTIONS NOT LESS THAN 4" WIDE CONSTRUCTED OF HEAVY, WATERPROOF, WOVEN PLASTIC COATED GLASS FABRIC AT SUPPLY AND RETURN CONNECTIONS TO FURNACES, AIR HANDLING, ROOFTOP, MAKE-UP AIR OR FAN-COIL UNITS. CORNERS SHALL BE SEWN TIGHT. CONNECTIONS SHALL BE 20 OUNCE VENTFABRICS OR EQUAL.</div> <div>5. COMBINATION FIRE AND SMOKE DAMPERS OR FIRE DAMPERS IN DUCTWORK THROUGH ALL FLOORS AND FIRE WALLS SHALL BE FURNISHED AND INSTALLED AS REQUIRED TO CONFORM TO THE LATEST NFPA BULLETIN CONCERNING THIS TYPE OF BUILDING AND SHALL BEAR THE U.L. LABEL. DAMPERS, COMPLETE WITH MOUNTING ANGLES, SHALL BE MULTI-BLADE, FUSIBLE LINK, SPRING ACTING WITH 11 GAUGE SLEEVE. FUSIBLE LINK SHALL BE RATED AT 165°F.</div> <div>6. DUCT MOUNTED BALANCING DAMPERS SHALL BE USED TO CONTROL SUPPLY AIR TO EACH DIFFUSER AND GRILLE. AN OPERATING HEAD SHALL BE PLACED ON THE SIDE OF THE DUCT WITH A POSITIVE LOCKING QUADRANT. DAMPERS SHALL BE PROVIDED IN RETURN AND EXHAUST AIR DUCTS WHERE SHOWN ON DRAWINGS. COORDINATE THE LOCATION OF CEILING ACCESS PANELS.</div> <div>7. PROVIDE CEILING ACCESS DOORS AT ALL LOCATIONS OF BALANCING DAMPERS, FIRE DAMPERS, FIRE/SMOKE DAMPERS, VALVES, ETC., WHERE THERE IS NOT A LIFT-OUT TYPE CEILING. ACCESS DOORS SHALL BE HINGED OF METAL CONSTRUCTION WITH SCREWDRIVER LATCHES.</div> <div>8. AT FIRE DAMPERS, A DUCT MOUNTED SHEET METAL HINGED DOOR SHALL BE PROVIDED AND INSTALLED WITH POSITIVE LOCKING HANDLE. WHERE DUCTS ARE INSULATED, COVERS SHALL BE INSULATED.</div> <div>9. GRAVITY OR BACKDRAFT DAMPERS SHALL BE ALL ALUMINUM CONSTRUCTION, INTERCONNECTED AND BLADED, PRESSURE DROP THROUGH DAMPERS SHALL NOT EXCEED 0.04 INCH W.G.</div>

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DAMPER SCHEDULE		
SYMBOL	DESCRIPTION	ACCEPTABLE MANUFACTURERS
MVD	MANUAL VOLUME DAMPER: RECTANGULAR, SINGLE BLADE, 22 GAUGE GALVANIZED STEEL BLADE MOLDED SYNTHETIC BEARING, (12" MAXIMUM DUCT HEIGHT) OPTIONS AND ACCESSORIES: STAND-OFF BRACKET LOCKING QUADRANT	RUSKIN MD25 AIR BALANCE AC111T LOUVERS & DAMPERS MBD GREENHECK MBD–10
RMVD	MANUAL VOLUME DAMPER ROUND, SINGLE BLADE, 22 GAUGE GALVANIZED STEEL BLADE, MOLDED SYNTHETIC BEARING (4" DIA TO 20" DIA) OPTIONS & ACCESSORIES: STAND-OFF BRACKET LOCKING QUADRANT	RUSKIN MDR25 AIR BALANCE AC112T LOUVERS & DAMPERS RBD GREENHECK MBD–50
OBD	OPPOSED BLADE DAMPER RECTANGULAR, MULTI-BLADE, 16 GAUGE GALVANIZED STEEL BLADE MOLDED SYNTHETIC SLEEVE BEARING OPTIONS AND ACCESSORIES: STAND-OFF BRACKET LOCKING QUADRANT	RUSKIN MD35 AIR BALANCE AC–2 LOUVERS & DAMPERS GB–2 GREENHECK MBD–15
BDD	OPPOSED BLADE DAMPER RECTANGULAR, MULTI-BLADE, ALUMINUM FRAME, 0.025" ALUMINUM BLADES, VINYL BLADE SEALS, RETURN SPRING	RUSKIN BD2/A1 AIR BALANCE BDC LOUVERS & DAMPERS CBC GREENHECK WD

ROOFTOP					
SYMBOL	MANUFACTURER	MODEL NO.	NOMINAL TONS	AIR FLOW (CFM)	EXT S.P. (IN W.G.)
RTU—1	YORK	ZF060N08N1AAA1	5	1999	0.60

NOTE 1: PROVIDE INTEGRAL STARTER/FUSED DISCONNECT.

NOTE 2: PROVIDE GFCI, WEATHER—PROOF—IN—USE OUTLET FACTORY MOUNTED AND

NOTE 3: PROVIDE SINGLE POINT ELECTRICAL CONNECTION

NOTE 4: PROVIDE THE FOLLOWING ACCESSORIES: LOW AMBIENT CONTROL; ROOM TH

ANTI—RECYCLING CONTROL; INTEGRATED DIFFERENTIAL ENTHALPY CONTROL

ROOF CURB (COORDINATE EXACT INSTALLATION LOCATION OF THERMOSTAT

NOTE 5: CAPACITY AT SEA LEVEL

NOTE 6: PROVIDE INPUT TERMINAL FOR FAN SHUTDOWN. INPUT WILL COME FROM

EXH					
SYMBOL	AREA SERVED	MANUFACTURER	MODEL NO.	CFM	STATIC PRESSURE IN WG.
EF—1	MOP SINK	LOREN COOK	GC—320	130	0.25
EF—2	BATHROOM	LOREN COOK	GC—320	130	0.25

NOTES

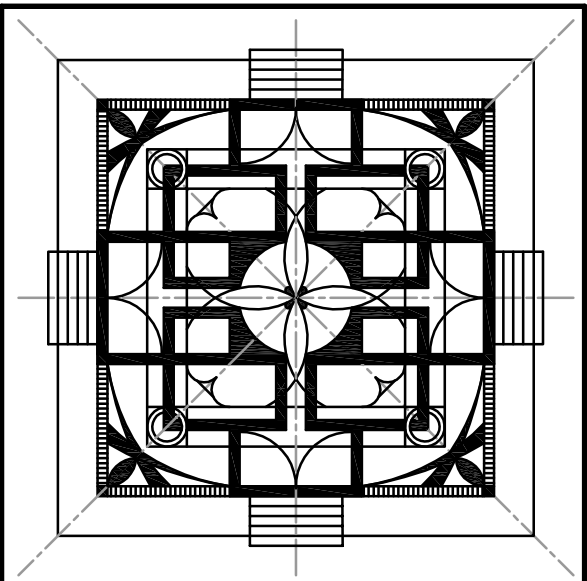
(1) ALL CAPACITIES AT JOBSITE ELEVATION

OPTIONS & ACCESSORIES

(10) WALL CAP

GRILLES, REGISTERS AND DIFFUSERS						
SYM	MANUF	MODEL	SIZE	MAX CFM	MAX NC	DESCRIPTION
CD–1	EH PRICE	SPD	6" DIA.	230	30	SQUARE PLAQUE FACE CEILING DIFFUSERS. REMOVABLE FACE, C.W./O.B.D. FRAME SHALL BE FOR SURFACE OR LAY-IN MOUNTING AS REQUIRED BY CEILING TYPE. LAY-IN FRAMES SHALL BE 24" x 24", 24" x 12" OR 12" x 12" AS REQUIRED TO FIT CEILING TILE SPACE AVAILABLE.
			7" DIA.	300		
			8" DIA.	350		
			10" DIA.	545		
			12" DIA.	710		
			14" DIA.	960		
RG–1	EH PRICE	PDDR	10 x 10	350	30	PERFORATED FACE RETURN AIR UNIT, REMOVABLE FACE & CORE. FRAME SHALL BE FOR SURFACE OR LAY-IN MOUNTING AS REQUIRED BY CEILING TYPE. LAY-IN FRAMES HSSL BE 24" x 24", 24" x 12" OR 12" x 12" AS REQUIRED TO FIT CEILING TILE SPACE AVAILABLE. AIR QUANTITY SHALL MATCH ROOM SUPPLY OR EXHAUST AIR QUANTITY.
			12 x 12	500		
			14 x 14	550		
			10 x 22	625		
			16 x 16	725		
			18 x 18	900		
			20 x 20	1000		
			22 x 22	1320		

DUCT INSULATION REQUIREMENTS					
DUCT SYSTEM	DUCT LOCATION	INSULATION MATERIAL	MINIMUM THERMAL RESISTANCE	FIELD APPLIED JACKET	VAPOR RETARDER REQ'D
SUPPLY AIR	BUILDING INTERIOR, CONCEALED	MINERAL-FIBER BLANKET	5.0	NONE	NO
RETURN AIR	BUILDING INTERIOR, CONCEALED	MINERAL-FIBER BLANKET	5.0	NONE	NO
EXHAUST AIR	BUILDING INTERIOR, CONCEALED	NONE	---	---	---
FLEXIBLE DUCT	BUILDING INTERIOR	MINERAL-FIBER BLANKET POLYETHYLENE INNER & OUTER JACKET	5.0	NONE	NO
<div>NOTES: 1. ALL DUCT INSUALTION SHALL HAVE ALL SERVICE JACKET MANUFACTURED FROM KRAFT PAPER, REINFORCED SCRIM, ALUMIMUM FOIL OR VINYL FILM 2. DUCT INSULATION SHALL BE MECHANICALL FASTENED TO DUCTS WIDER THAN 24" AND SHALL BE AFFIXED TO BOTTOME OF DUCT WITH WELDED METAL PINS AND 2" WAHRSERS AT 18" MAXIMUM SPACING 3. DUCT LINER, WHERE SHOWN ON DRAWINGS, SHALL BE A MINIMUM OF 1" THICK AND SHALL HAVE A MINIMUM "R" VALUE OF 3.8. 4. DUCT LINER SHALL NOT BE SUBSTITUTED FOR DUCT LINER UNLESS THE MINIMUM "R" VALUE OF THE DUCT LINER IS INCREASED TO A MINIMUM OF 5.0. 5. DUCT DIMENSIONS SHOWN ON THE DRAWINGS ARE NET FREE AREA. WHERE DUCT LINER IS SHOWN, INCREASE METAL DUCT SIZE TO ALLOW FOR THICKNESS OF DUCT LINER. 6. TOTAL LENGTH OF FLEXIBLE DUCT RUN SHALL NOT EXCEET 3'–0". EXTEND SHEET METAL DUCT TO WITHIN 3'–0" OF THE AIR INLET OR AIR OUTLET DEVICE. OFFSET OF FLEXIBLE DUCT SHALL NOT EXCEED ONE-HALF (1/2) OF THE DUCT DIAMETER 7. ALL DUCT CHANGES IN DIRECTION SHALL BE MADE WITH RIGID ELBOWS OR OTHER RIGID METAL FITTINGS.</div>					



**SYMMETRY FIRST  
ARCHITECTS,  
LLC**  
8600 Foundry Street  
Box 2069  
Savage, MD 20763  
240-568-0700  
240-568-0354 fax  
www.symmetryfirst.com

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REVISIONS		
SYMBOL	DATE	ISSUED FOR
△	10.21.11	PERMIT REVISION

PROJECT NUMBER	11-160
DATE	9.1.11
SCALE	AS NOTED
DRAWING TITLE	MECHANICAL SCHEDULES & SPECIFICATIONS

SHEET NUMBER	M.601
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